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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,062	08/29/2003	Daigo Aoki	DAIN:578B	8988
6160	7590	03/31/2005	EXAMINER	
PARKHURST & WENDEL, L.L.P.			KEEHAN, CHRISTOPHER M	
1421 PRINCE STREET			ART UNIT	
SUITE 210			PAPER NUMBER	
ALEXANDRIA, VA 22314-2805			1712	

DATE MAILED: 03/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/651,062		AOKI ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Christopher M. Keehan		1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 50-67 is/are pending in the application.
- 4a) Of the above claim(s) 66 and 67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 50-65 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/789,748.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/29/03</u> . | 6) <input type="checkbox"/> Other: _____  |

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## **DETAILED ACTION**

### ***Election/Restrictions***

Claims 66 and 67 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 10/25/04. Applicant's election with traverse of Group I in the reply filed on 10/25/04 is acknowledged. The traversal is on the ground(s) that there is no undue burden on the examiner, particularly because claims 66 and 67 depend from claim 50. This is not found persuasive because claims 66 and 67 are drawn to a process for producing an electronics device, and set forth steps to do so. There are other different ways to produce this patterned layer, such as by mechanical masking, which is an entirely different search. The requirement is still deemed proper and is therefore made FINAL.

### ***Double Patenting***

Claims 50-65 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 6,573,650 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter of claims 50-65 is included in the claims of 6,573,650 B2. The claims of the instant application claim a wettability-changing layer capable of charge-injection and/or charge transfer, and capable of changing wettability when light energy is applied thereto. Claims 1-9 of 6,573,650 B2

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set forth a device with the wettability-changing layer thereon, and wherein the layer is formed from a binder and photocatalyst, with a charge facilitator added. Looking to the specification for the definition of these components reveals the binder, photocatalyst, and charge facilitator as claimed in the instant application.

Claims 50-65 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 6, and 9-14 of U.S. Patent No. 6,650,047 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter of claims 50-65 is included in the claims of 6, 650,047 B2. The claims of the instant application claim a wettability-changing layer capable of charge-injection and/or charge transfer, and capable of changing wettability when light energy is applied thereto. Claims 1-3, 6, and 9-14 of 6,650,047 B2 set forth a device with a wettability-changing layer thereon and wherein the layer is formed from a binder and photocatalyst, with a charge facilitator added. Looking to the specification for the definition of these components reveals the binder, photocatalyst, and charge facilitator as claimed in the instant application.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 50-55 are rejected under 35 U.S.C. 102(e) as being anticipated by Kimura et al. (6,228,480 B1). Regarding claims 50-55, Kimura et al. disclose a wettability-changing layer comprising a photocatalyst (col.8, lines 42-57) of titanium dioxide and a binder as claimed (col.7, line 47-col.8, line 19 and col.8, line 65-col.9, line 20). Regarding the claim language in claim 50 of “capable of charge-injection and/or charge transfer, said layer being capable of changing wettability when light energy is applied thereto”, and the claim language of claim 51, this appears to be future intended use of the layer. It is not clear how the future intended use of the claimed layer materially affects the overall article. The same materials are present in Kimura et al.,

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and it is therefore not clear why the layer of Kimura et al. would not operate in the manner as claimed.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 50-52, 54-58, and 60-63 are rejected under 35 U.S.C. 102(b) as being anticipated by Murasawa et al. (EP 0633064 A1). Regarding claims 50-52, 54-58, and 60-63, Murasawa et al. disclose a wettability-changing layer comprising a photocatalyst (page 4, lines 22-39), binder (page 3, lines 54-58), and a charge facilitator of metal salt (page 4, lines 6-11). Regarding the claim language in claim 50 of “capable of charge-injection and/or charge transfer, said layer being capable of changing wettability when light energy is applied thereto”, and the claim language of claim 51, this appears to be future intended use of the layer. It is not clear how the future intended use of the claimed layer materially affects the overall article. The same materials are present in Murasawa et al., and it is therefore not clear why the layer of Murasawa et al. would not operate in the manner as claimed.

Claims 50-55, 64 and 65 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al. (6,294,313 B1). Regarding claims 50-55, Kobayashi et

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al. disclose a wettability-changing layer comprising a photocatalyst (co.13, lines 33-40), binder (col.14, line 12-col.18, line 15), and a charge facilitator of metal salt as claimed (page 4, lines 6-11).

Regarding claims 64 and 65, Kobayashi et al. disclose an electronics device and materials formed patternwise as claimed (col.24, lines 35-45).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 56-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (6,294,313 B1) in view of Murasawa et al. (EP 0633064 A1). Kobayashi et al. and Murasawa et al., as applied above, are as set forth and incorporated herein. Regarding claims 56-63, Kobayashi et al. do not appear to specifically disclose adding a charge facilitator, such as a metal salt, to the layer. Murasawa et al. disclose adding a metal salt in addition to the photocatalyst to produce a higher photocatalytic function (page 4, lines 5-11), which would appear to result in charge facilitation as claimed by applicant. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the charge facilitator as taught by Murasawa et al. to the layer of Kobayashi et al. because

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Murasawa et al. teach that adding a charge facilitator, such as a metal salt, produces a higher photocatalytic function, resulting in a more effective and higher quality product.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Keehan whose telephone number is (571) 272-1087. The examiner can normally be reached on Monday-Friday, from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher Keehan *CMK*

March 28, 2005

DAVID J. BUTTNER  
PRIMARY EXAMINER

*David Buttner*